Kodak

Magnus VLF

Replacing Registration Pins

02 Feb 2007

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Revision History

Revision	Date	Author	Comments
1	22 Jan 2007	A.Blignaut	Draft document
2	02 Feb 2007	A.Blignaut / G.Tang	Minor corrections made.

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1. OVERVIEW

This document describes the procedure that must be followed to replace any of the registration pins and/or registration pin wires located on the Magnus VLF device's drum. You need to know which registration pins or wires need to be replaced before starting this procedure.

2. PARTS/TOOLS

- Replacement pin(s)
- Replacement wire(s)
- Loctite® 222
- Hex keys
- Automatic center punch

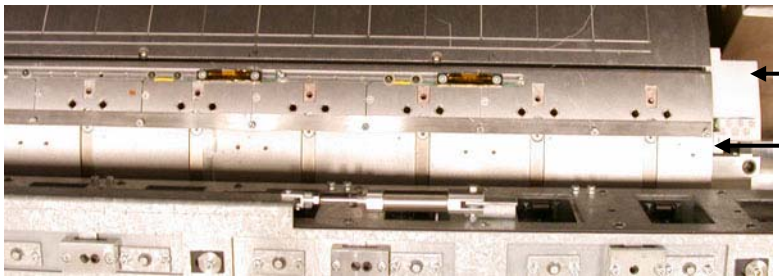
3. REPLACING A REGISTRATION PIN AND WIRE

3.1 Removing the pin and wire

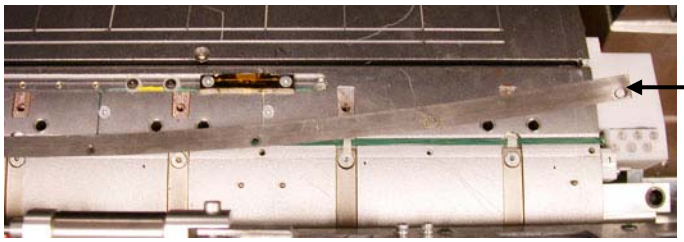
1. Type `>>lec off` to release the leading edge clamps (LECs).
2. To get better access to the drum, type `>>backbone tiltedload` to move the backbone down.
3. Type `>>door unlock` to unlock the rear hood.
4. Type `>>carriage moveto <position>` to move the carriage to the away side of the device (position will be defined by the Mtravel parameter for that drum size).
5. Open the rear hood. The drum becomes idle when the safety loop is broken.
6. Turn the device power off.
7. Spin the drum so that the LECs are on top.
8. Remove one of the rear panels behind the drum and use foam or something similar to prevent the drum from turning or moving. If you have a drum support jig handy, then use that.
9. Remove the two screws on each LEC and remove the LECs and springs from the drum. While removing the screws you must hold the LECs down to prevent the springs skewing the LEC and damaging the screw threads.

Note: If any screws are tight and difficult to remove, try the tip given in

Appendix A – Loosening Tight Screws.

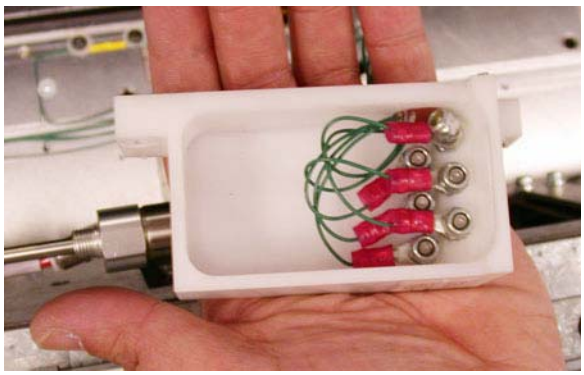


10. Remove the 19 screws holding the wire cover strip in place and remove the cover strip. If the existing screws are button-head screws, they may be difficult to remove—take care not to strip the screw heads. See Appendix A – Loosening Tight Screws.

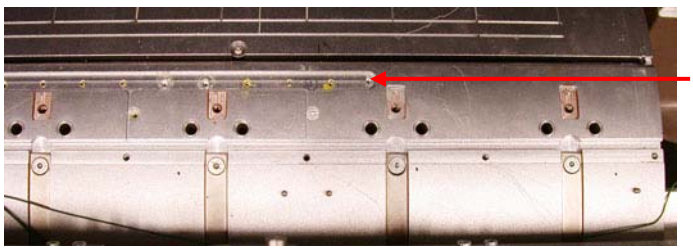


11. Remove the two screws holding the registration block to the drum.

12. Remove the registration block's back plate. Mark the lug for the registration pin wire to be replaced with the pin number and disconnect the lug from the block. Most registration blocks are black and not white as shown in the photo.



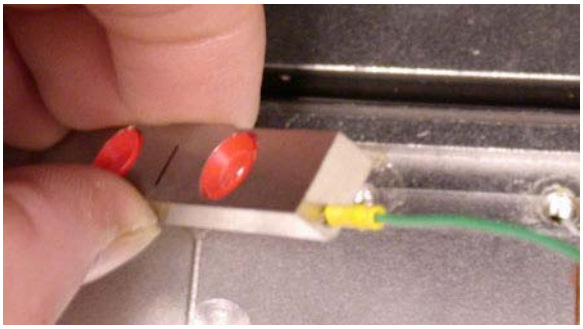
13. If replacing a registration pin and wire, remove the screws on that registration pin and remove any screws that are used to hold the registration pin wire in place on the drum. Remove the registration pin and wire completely.



If only replacing the registration pin wire, then only remove the screws that secure the wire in place on the drum. Unplug the wire from the registration pin and remove the wire completely.

3.2 Installing a new registration pin

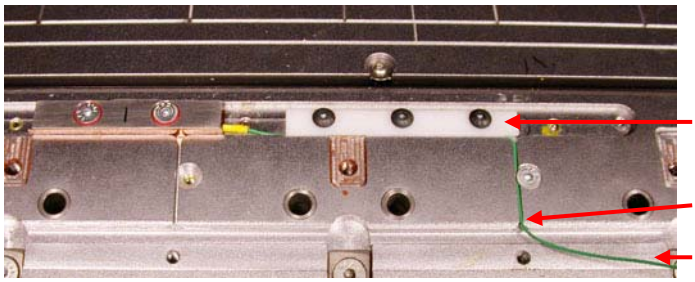
1. Connect a new pin wire to the registration pin and place the pin in its location on the drum. Put the insulating kapton strip under the registration pin and attach the pin to the drum with two new M5x12 screws. Apply Loctite 222 to the screws and torque the screws to 1.5 N m.



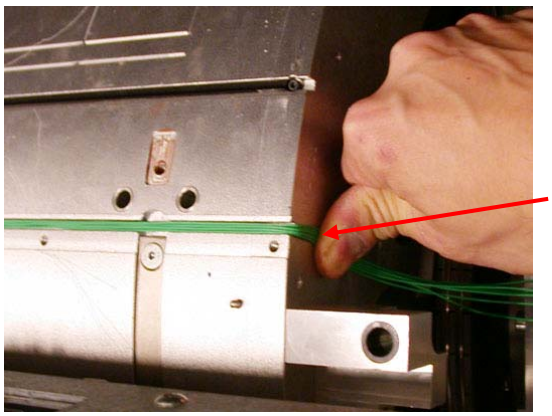
3.3 Installing a new registration pin wire

Note: When securing the registration pin wires in place, take extreme care not to pinch or damage the wires and do not get Loctite on the wires (Loctite will eat away at the wire insulation).

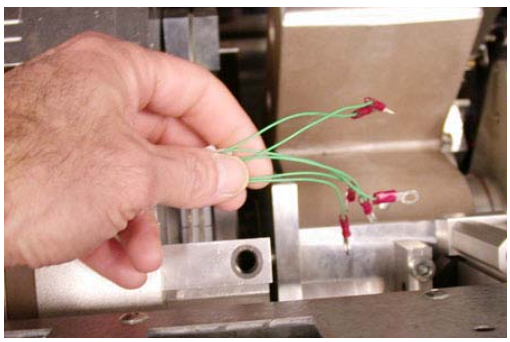
1. If it is not already done, connect the replacement wire to the registration pin.
2. Route the wire along the same route that the old one was removed—this should be the shortest route to one of the vertical wire grooves in the drum and then along the main wire pocket along the length of the drum.
3. To hold the wire in place alongside the registration pin, use the wire hold-down block. To prevent pinching the wire under the plastic block, put it down at the top of the pin pocket with the chamfer down and towards the wire. Press on the block and slide it down against the bottom edge of the pocket trapping the wire in the chamfer. Apply Loctite 222 to the screws and torque the screws to 1.5 N m.
4. To secure the wire in the vertical wire groove, remove and reinstall the screw that is alongside that groove. If the Loctite on the screw threads is too sticky, replace the screw with a new one and apply Loctite 222 to the screw. Be sure to push the wire to the bottom of the groove before tightening the screw. A small steel ruler works well for pushing the wire down.
   Torque the screw to 1.5 N m.



5. Mark the label on that wire with the number of the registration pin.
6. At the home side of the drum, pull the wire tight so that it lays flat inside the wire pocket along the length of drum. Tape the wire down against the side of the drum to prevent it from moving while installing the wire cover strip.



7. Starting on the away side of the drum, install the wire cover strip with 19 new M4x8 socket-head cap screws. Take care not to pinch any wires under the cover strip. Apply Loctite 222 to the screws and torque the screws to 2.6 N m.
8. Cut the new wire approximately 100 mm (4 in.) from the drum's edge. Strip the wire end and use a crimping tool to crimp a lug onto the end of the new wire. The photo below shows multiple wires and lugs that are being replaced.



9. Check the wire connections and insulation using a multimeter.
   To check that the wire is not shorting to the drum, measure between the registration pin body and the screw holding the wire in place in the vertical wire groove—it must be open circuit.
   To check that the wire is not broken or mixed up, measure between the registration pin body and the lug for that pin—there should be continuity.

10. Connect the wire lug to the corresponding connection inside the registration block. Don't forget to feed the wire through the hole in the side of the block before connecting it. The wire connections are marked on the side of the registration block.

11. Attach the backing plate on the registration block and install the block on the drum with the two screws previously removed.

12. Again, check the wire connections and insulation using a multimeter.
    Measure between the registration pin body and the screws holding the wire cover strip in place—it must be open circuit.
    Measure between the registration pin body and the corresponding connection inside the registration block—there should be continuity.

13. Insert the LEC springs into the relevant holes in the drum. Install the LECs by holding the LECs down while inserting the screws to ensure that the screw threads are not damaged.
    Apply never seize under the screw heads and torque the screws to 6 N m. Do not put Loctite on the screw threads.

14. Remove the foam preventing the drum from turning.

15. Install any panels that were removed from the device.

16. Close the rear hood.

17. Return any other peripherals or covers that were moved for access to the home and away sides of the device.

18. Turn the device power on.

4. APPENDIX A – LOOSENING TIGHT SCREWS

When you encounter a screw that is very tight and difficult to get loose, try this tip to loosen the screw. You will need an automatic hand punch and the hex key for that screw.

1. Adjust the automatic punch as tight as possible to comfortably press and fire it with one hand.
2. Use the punch to make a dimple or indent on the top of the screw head and as close to the edge as possible.
3. With one hand, use the hex key to put torque on the screw in an anticlockwise direction (loosening). While maintaining the torque pressure, use the other hand to fire the automatic punch at an angle in the dimple created in step 2—again in an anticlockwise direction. You may need to fire the punch several times before the screw jumps loose.

